GLAST Monthly PSR

Ground System/Mission Ops

May 2003

Mike Rackley
GLAST Ground Sys/Ops Manager

Accomplishments

▶ ***Continuing to work documents needed for issuance of the MOC RFP***

  – *SOW boarded at 4/28 CCB and will be baselined out-of-board once requested changed are made and reviewed*

  – *MOC requirements (in Ground System Requirements Document) submitted for CCB baselining and is under review – will be boarded after LAT CDR*

  – *GSA Task to Omitron for Swift/GLAST MOC support completed – GLAST support covered up to July 1st, but task extends to Jan 2004*

▶ ***Supported Spacecraft and FSW PDR Dry Runs***

  – *Supported completion of FSW Software Requirements Peer Review*

  – *Had splinter with Spectrum I&T lead (Ron Zitek) – discussed schedule for spacecraft interface (RF and MOC) tests and ops simulations, installation and use of MOC workstations in the I&T facility, role of the flight ops team in I&T, data and voice links between the I&T facility and GSFC MOC, potential for using the same anomaly/discrepancy management system for I&T and Ops (SERS)*

▶ ***Supported IOC-portions of the LAT CDR Chart Flip-Thru***

  – *Worked with IOC personnel to implement some of the comments made during the chart flip*

Accomplishments

▶ ***Reviewing GBM IOC PDR documents***

- *Review scheduled for Thur, May 1st*

- *Documents include EGSE Specifications, IOC Ground S/W Dev Plan, IOC Ground System Plan, IOC Mission Ops and Data Analysis Functional Specifications, and GBM Simulation & Detector Response S/W Func Spec*

▶ ***Conducted final review of GDS MAR Document with Code 300 (David Harmon and Tony DiVenti)***

- *Code 300 making last few changes and will submit to CCB*

▶ ***Working to complete internal review of Ops Concept Document Update and the first draft of the complete Ground Sys Requirements Document (GSRD)***

- *Expect distribution for review be next week*

▶ ***Conducted working meeting (at GOWG) to walk through TOO handling in terms of process, latency, data flow, implementation approach***

- *Consensus was that system/people can meet the 6 hour requirement, and will more typically get a TOO Request processed in an hour or two*

- *Results being factored into Ops Concept and Requirements*

Accomplishments

▶ ***Began review of and discussions on Spectrum's two simulators (CTS & MTS)***

  – *Will discuss simulators (particularly the MTS) in splinter meeting with Jim Howe) at SC PDR*

  – *Will put together consolidated set of comments for both simulators*

  – *Provided Erik with initial cut at functionality needed from instrument simulators (those integrated with the MTS) and the assumptions ground sys is making*

▶ ***Swift completed the TDRSS RF testing and found that the latency for initially locking up with TDRSS was between 8 and 9 seconds***

  – *2 kbps rate better – about 4 seconds*

  – *On GLAST, we only have 5 seconds allocated in the requirements*

  – *This should be revisited – Swift has 20 seconds end-to-end vs. our 7*

Issues/Problems

- **Spacecraft/instrument issues on our radar:**

  - *10% duty cycle limitation –RESOLVED*

  - *Lack of cross strapping with SSR design – RESOLVED*

  - *Multiple TDRSS telemetry rates – RESOLVED (almost)*

  - *Increases in dump time requirements if HK rate increases above about 40 kbps*

    - *Spectrum proposes to go to 51 kbps, bumping us up from a science driven dump time of 26 minutes/day to 35 minutes/day (about one extra pass)*

    - *With operations needing to schedule about 100% margin on contacts (giving us 6 contacts/day), we might be OK – we loose one contact of margin*

  - *Instrument simulator requirements/capabilities relative to mission ops simulations needs, and how the simulators would be integrated with with MTS (and maintained)*

- **Finalization of MOC contract award to Golbelt Orca**

  - *SOW done, need to baseline MOC requirements, need RFP out ASAP*

  - *Temporary support via Swift GSA Task to July 1st*

Issues/Problems

▶ ***Need to reevaluate two latency requirements***

- – *Data processing: 72 hours end-to-end OK, but 36 hour allocation to spacecraft leaves too little for data transfer and processing on ground*

- – *Burst Alert Message handling: Cannot achieve 7 second end-to-end requirement with first message – maybe the "85% of the time" caveat saves us?*

▶ ***Need to reevaluate the near term ground system documentation and review (SRR) schedule***

- – *Ground System SRR (GDS SRR) scheduled for June 18th will be very tough to meet with SC, LAT and GBM, and Mission reviews taking up a lot of team time*

- – *Need to complete Ground System Project Plan, Ops Concept Update and Ground System Requirements Document before we start preparing slides for the GDS SRR*

- – *GDS PDR not until early December'03, so looking to push GDS SRR out to late July timeframe at earliest– need to work this with rest of GDS team*

  - • *Will provide better opportunity to have MOC contractor officially on-board*

Upcoming Events

- ***GBM IOC PDR/TIM – May 6th & 7th***

  - *Main focus is on IOC hardware and software needed for I&T, but there is some discussion on ops-oriented IOC topics*

  - *GDS/Ops team will attend review*

  - *Will also conduct Technical Interchange Meeting to discuss ops concepts requirements, schedules, and interfaces – generated/distributed agenda*

- ***Update to Ops Concept Document and initial draft release of Ground System Requirements Document (GSRD)***

- ***Ground System SRR June 18th (to be rescheduled)***

  - *Ground system implementation and test approach, concept, schedule, organization*

  - *Ground system architecture*

  - *Ground system requirements – system and element level*

  - *Operations readiness approach*

Rolling Wave Schedule

Activity ID	Activity Description	Orig Dur	Start	Finish
Ground System & Mission Operations				
Ground System Wide Reviews				
Ground System Wide Reviews				
0100	Ground System Requirements Review		03FEB03	18JUN03
0103	Ground System Preliminary Design Review		19JUN03	03DEC03
0106	Ground System Critical Design Review		04DEC03	01JUN04
Ground System Wide Documentation				
Ground System Wide Documentation				
0204	Ground System Project Management Plan		02JAN03	30APR03
0186	Operations Concept Document Rev. 1		02JAN03	15MAY03
0168	Ground System Requirements Documents-SRR Ver.		02JAN03	02JUN03
Ground System Development				
Ground System Development Documentation				
0265	SN / MOC ICD - Preliminary		19JUN03	19JUN03
0175	MOC / GBM IOC ICD - Final		19JUN03	26MAY04
0205	MOC / Commericial Ground Station ICD - Final		19JUN03	26MAY04
0214	MOC / Malindi Ground Station ICD - Final		19JUN03	26MAY04
0604	MOC / LAT IOC ICD - Final		19JUN03	26MAY04
0619	LAT IOC / DPF ICD - Final		19JUN03	26MAY04
0643	MOC / SSC ICD - Final		19JUN03	26MAY04
0646	MOC / GCN ICD - Final		19JUN03	26MAY04
0655	SSC / HEASARC ICD - Final		19JUN03	26MAY04
0661	MOC / SC ICD - Final		19JUN03	26MAY04
0664	SSC / LAT IOC ICD - Final		19JUN03	26MAY04
0667	SSC / GBM IOC ICD - Final		19JUN03	26MAY04
0163	SN / MOC ICD - Final		20JUN03	27MAY04
0613	Ground System Verification Plan		01AUG03	14MAY04
Ground System MOC Development				
0631	MOC Requirements Document (SRD)		31JUL03	06FEB04
Ground System LAT IOC Development				
1078	LAT IOC (SAS/DPF) Release 1		02JAN03	15APR03
1081	LAT IOC (SAS/DPF) Release 2		16APR03	01JUN04
1087	LAT IOC (SAS/Sci Tools) Release 1		02JUN03	01JUN04
Ground System GBM IOC Development				
1036	GBM IOC (DA/MO) PDR		05MAR03	05MAR03
1039	GBM IOC (DA/MO) CDR		01OCT03	01OCT03
1042	GBM IOC (DA/MO) Release 1		02OCT03	14JUL04
Mission Operations				
Mission Operations Documentation				
0489	Operations Agreements		19MAY03	01OCT03

2003: JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Start Date	03APR00	Early Bar
Finish Date	22DEC06	Progress Bar
Data Date	01MAR03	Critical Activity
Run Date	31MAR03 17:15	

© Primavera Systems, Inc.

GL02 — Sheet 1 of 1

GLAST Project Summary
Schedule - Ground System PSR DRAFT
4/2/03

Date	Revision	Checked	Approved